

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2000011443 A

(43) Date of publication of application: 14.01.00

(51) Int. Cl

G11B 7/135

G02B 5/04

G02B 5/32

(21) Application number: 10359706

(71) Applicant: NEC CORP

(22) Date of filing: 17.12.98

(72) Inventor: OBA AKITOMO

(30) Priority: 21.04.98 JP 10110970

(54) OPTICAL MODULE DEVICE, COMBINED PRISM
USING IT, AND FORMING METHOD THEREOF

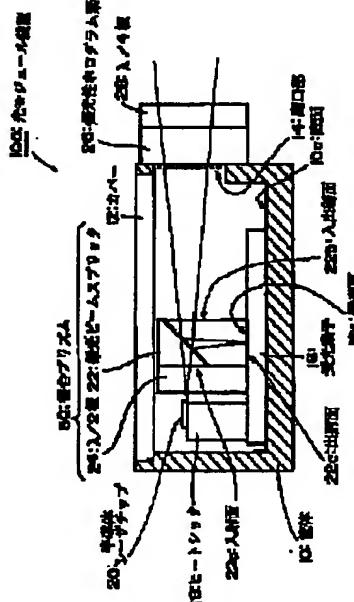
without laying it on its side and the optical head
can be made thinner.

(57) Abstract:

COPYRIGHT: (C)2000,JPO

PROBLEM TO BE SOLVED: To provide an optical module device permitting to make an optical head device thinner.

SOLUTION: To input/output light from the side of the case, this optical module is provided with a half-wave plate 24 converting TE-polarized output light emitted from a light emitting element 20 into TM-polarized light, a polarized light beam splitter 22 transmitting the TM-polarized output light and reflecting the returning light of TM-polarized light toward a light receiving element 16, a polarizing hologram element 26 transmitting the output light as 0-order light and diffracting the returning light as primary light, and a quarter-wave plate 28 outputting TM-polarized output light by converting it into circular-polarized light and also converting the returning circular-polarized light from outside into TE-polarized light. As a result, it is possible to mount the optical module on the optical head



(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2001203435 A

(43) Date of publication of application: 27.07.01

(51) Int. Cl

H05K 1/18

H01L 23/12

H05K 1/14

(21) Application number: 2000012971

(71) Applicant: IBIDEN CO LTD

(22) Date of filing: 21.01.00

(72) Inventor: SUGIYAMA SUNAO

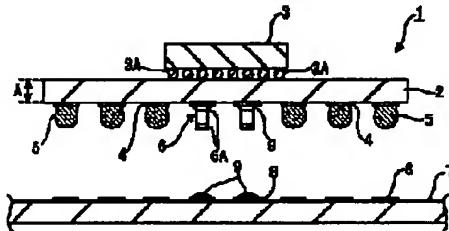
(54) CONNECTION STRUCTURE OF BALL GRID
ARRAY TYPE PACKAGE

COPYRIGHT: (C)2001,JPO

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a connection structure which can reduce the distance between an integrated circuit chip and an electronic component, in the connection structure of a ball grid array type package.

SOLUTION: On a lower face side of a ball grid array type package 1, a solder ball 5 is provided, and the solder ball 5 is melted and resolidified through a reflow process, so as to connect it to another printed board 7. Furthermore, on the lower face side of the package 1, electronic components 6 are disposed, and a pair of terminal parts 6A provided at both end parts of the electronic component 6 are soldered to each of both printed boards 2, 7, so that both pads 4, 8 are connected to each other.



- 1...ボールグリッドアレイ型パッケージ
- 2...プリント基板
- 3...熱可塑性テープ
- 4...ハンダボール
- 5...電子部品
- 6A...端子部
- 7...他のプリント基板